# Response to Intervention and Gifted and Talented Education

"All educators for all students"

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# Response to Intervention (RtI)

# and

# Gifted and Talented Education (GT)

*"All educators for **all** students"*

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**Contributors**
Michael Hall Curriculum and Instruction Unit Manager Office of Public Instruction
Deb Poole Gifted and Talented Instructional Coordinator Office of Public Instruction
Mary Rearden, Great Falls Public Schools
Ruth Carlstrom Great Falls Public Schools, retired
Stephanie Smith, Answers Plus Consulting
Joette Speaks, Colstrip Public Schools



Montana
Office of Public Instruction
Denise Juneau, State Superintendent
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## INTRODUCTION

***What is RtI and how does it help students who are Gifted or Talented? How do we make sure we mean all when we say all?***

When the Individuals with Disabilities Education Improvement Act was reauthorized in 2004, a powerful new element was added to the law stressing prevention-focused instructional practices to be used in the regular classroom. Awareness of these new requirements is growing, but many educators are still asking, "What services should be made available? Which students should get them? How do we organize this process and make informed decisions?"

Some educators are also asking, "How does this apply to students who may already know most of what I am planning to teach them or whose ability to learn is so fast that they quickly learn the material?" "What about students who may have disabilities which may interfere with learning but who still display traits of giftedness?"

The RtI model assumes that *each student* receives high-quality, research-based, and differentiated instruction from a general educator in a general education setting. The National Association of State Directors of Special Education (NASDSE) has described RtI as a practice of:

- Providing high-quality instruction and interventions matched to *student need;*
- Monitoring progress frequently to make decisions about changes in instruction or goals; and
- Applying child response data to important educational decisions.

## RTI and Gifted

The Montana Office of Public Instruction (OPI) is committed to providing optimal learning conditions that support academic achievement for all students. When implemented with fidelity an RtI framework has the potential for meeting this commitment through the implementation of a multi-tiered system of support based on scientific evidence. The process also emphasizes the importance of local school principals as instructional leaders, the use of data to guide instruction, appropriate intervention and practice, parent involvement, and other research-based practices. **In the world of gifted education, this refers to implementing and sustaining efforts which ensure our students have access to differentiated curriculum, flexible pacing, cluster grouping, acceleration and other universal interventions available to all students in the regular classroom.**

Speaking in an edweek.org chat on RtI and Gifted Education Judy Elliott, Chief Academic Officer for the Los Angeles Unified School District, says this about RtI and gifted education:

*"Indeed RtI is a framework that works for all students, including gifted. Gifted students, too, have learning and behavior needs. Using the pyramid or triangle of RtI, specific interventions can be identified to support highly able students that need an extra scoop (Tier 2) or more specially challenging opportunities at Tier 3."*

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*"All educators for **all** students"*

**The fundamental question that RTI addresses is: "Under what conditions will a student successfully demonstrate a satisfactory response to the curriculum?"**

## Relating Gifted Education and Response to Intervention

There are eight non-negotiable essential components of RtI.

1. Evidence-based curriculum and instruction
2. Ongoing assessment
3. Collaborative teaming
4. Data-based decision-making
5. Fidelity of implementation
6. Ongoing training and professional development
7. Community and family involvement
8. Strong leadership

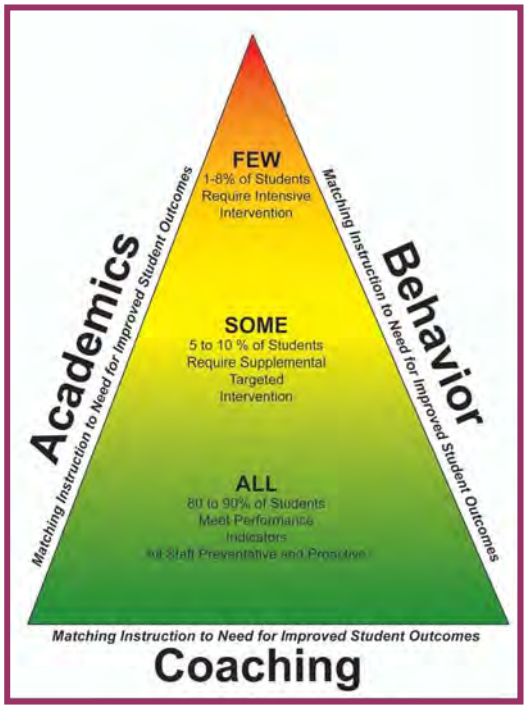
Each element is part of an interrelated process that should be applied to *every* student. RtI creates an integrated and seamless continuum of service that encompasses all staff through a multi-tiered service delivery model. It requires effective building leadership and ongoing collaboration among educators with a motto of *"all educators for **all** students."*

**A multi-tiered system of support provides guidance for delivering comprehensive, quality instruction for *all* students. An RtI framework is designed to provide evidence-based instruction and targeted interventions that lead to student success.**

# EXPLANATIONS AND INTERVENTIONS FOR EACH TIER

**Tier 1: ALL: Core Classroom Instruction**
All students should receive core classroom instruction utilizing scientifically based curriculum and methods to teach critical elements of a subject (reading, math, written expression ), e.g., 80-90 percent of students will have a sufficient response to instruction by demonstrating subject proficiency with Effective Tier 1 instruction. *Students who score at the higher level of Tier 1 should be receiving instruction that will continue to keep them challenged.*

**Tier 2: SOME: Strategic Targeted Instruction**
Some students will receive strategically targeted instruction in addition to core instruction. Strategic
Instruction addresses the specific needs of students who do not make sufficient progress in Tier 1. *It is important to be aware, especially when thinking of advanced learners, that educators need to measure, not what they know, understand and are able to do **relative to their age peers**, but rather what they have learned during their*



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*time in the classroom. Gifted students learn at a much faster pace than other students and should not be expected to wait for their age peers to catch up. They may spend from three to six years of their school lives learning nothing new. (Rogers 2002).*

Instruction is generally provided in a small group (3-5 students) format with similarly skilled students. The duration of this instruction varies based on student assessment and progress monitoring data that measures student response to intervention.

A 1992 study conducted by Drs. Joseph Renzulli and Sally Reis found that 40-50 percent of the regular curriculum could be eliminated with no detrimental effects for the top 10-15 percent of students. Therefore, students of high-ability require curriculum content and pace of curriculum above and beyond Tier 1 in order to meet their unique needs. Students performing above Tier 1 should be moved into Tier 2 or 3 interventions.

**Tier 3: FEW: Intensive Targeted Intervention**

Intensive targeted instruction is provided to the most at risk *(or the students who demonstrate the greatest intellectual need)* who have not sufficiently responded to Tier 1 and 2 instructions. It may in some cases replace core instruction. The duration of this intervention is extended over a longer period of time and varies based on student assessment and progress monitoring data.

**Student Movement through the Tiers**

Student movement through the tiers is a fluid process based on student assessment data and collaborative team decisions about students' response to instruction. It should be noted that students who receive interventions based on their needs for academic challenge are not expected to return to Tier 1 instruction. Our goal for these students is for them to learn and grow at an accelerated pace.

**Similarities between RtI and practices in the field of Gifted Education make this the perfect opportunity to allow "all students'" to truly mean all.**

- Like RtI, Gifted Education provides a tiered model of programming. Levels of intensity in programming allow for the diversity of individual needs of students who are gifted and talented. Response to Intervention provides support systems for students with exceptional ability or potential. Students who are gifted require special provisions because of their strengths and above-grade instructional level or potential.
- The basis of education for gifted students, like all students, is in the regular classroom. About 60 percent of gifted students will have their needs met within that setting, *as long as there is consistent differentiation.* Approximately 30 to 35 percent of the gifted students will need some type of additional services, such as pull-together (sometimes referred to as pull-out) activities or program offerings, academic competitions, special projects, etc. Even with differentiation and additional classroom services, approximately 5 to 10 percent will require some form of opportunity outside the regular classroom, such as grade skipping, subject acceleration, concurrent enrollment, etc.
- With its strong expectation of differentiation in the regular classroom, RtI embeds gifted education into the daily focus of quality instruction. Academic, affective and behavioral outcomes become critical targets for students, not solely enrichment targets as was a previous standard.

- In gifted education, rather than remediation-based interventions, strength-based interventions and strength-based programming, are used to describe tiered instruction. The problem-solving process which uses data, strengths and interests of students to implement appropriate, rigorous and relevant curriculum and instruction are strengths of RtI.
- RtI supports setting targets or trend lines for students. Long-term planning and monitoring of student progress will allow students to learn and grow toward accelerated expectations. The pace of acceleration is based upon individual experiences and needs and may include different forms of acceleration.
- Progress monitoring continually contributes new data so that learning is dynamic and adjustments are made for pace, depth and complexity of the evidence-based practices utilized.

## Tier 1: Core Classroom Instruction for *all* students

**TIER 1** refers to classroom instruction for ***all*** students that utilizes evidenced-based materials and practices to teach core subject areas (e.g., reading, written expression, and math).

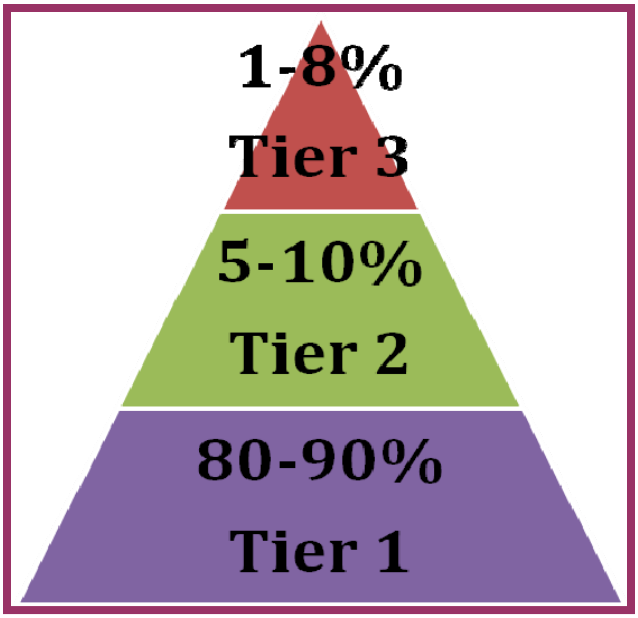
Assessment data is used to monitor and maintain the ongoing cycle of skill success. Screening or benchmark assessments are administered within the first four weeks of the school year to ***all*** students to identify students at risk for skill difficulty ***or mastery*** and at least two other times during the year (winter and spring) to determine if students are making progress or need extra support. Instruction is planned accordingly. Grade level assessments, Criterion-Reference Test (CRT) as utilized in the Montana Comprehensive Assessment System (MontCAS), and other assessments identify the content that students have mastered and thus indicate the need for appropriate subsequent challenging content.

In addition, ***screening for giftedness looks for exceptional abilities compared to age-mates.***

***Differentiated instruction occurs in flexible small groups within the instructional time.***

Outcome assessments are also administered to ***all*** students to determine student ***growth*** over time (3rd grade and above, MontCAS).

*Montana Board of Public Education Accreditation Standards guarantee that identified gifted and talented students are entitled to receive high-quality, rigorous, and appropriate academic challenge as a part of their regular classroom experience.*



| TIER 1 | |
|---|---|
| **COMPONENT** | **INSTRUCTION** |
| **Curriculum** | • Evidence-based core curriculum and instructional materials in core subjects areas |
| **Instructional Organization** | • Large group instruction of skills<br>• *ongoing progress monitoring and attention to affective needs* are critical attributes for continuous learning. Knowledge of the characteristics of gifted learners and use of proven strategies (e.g., concept learning, acceleration, and grouping) supports these attributes.<br>• Small differentiated group instruction for the acquisition and practice of skills (both higher level skills and remedial skills for twice exceptional students) and challenge activities as determined by benchmark and progress monitoring data.<br>• Pre-assessment should be done at **all** levels to prevent repetition and re-teaching of content students have already mastered. Students mastering, or nearly mastering the content, then move on to an advanced level of difficulty. According to research done by Dr. Karen Rogers, this practice, known as compacting, has a *.83 effect size*, paRtIcularly in math and science.<br>• The key in instructional delivery is to remember that high ability students must move through the curriculum at a faster pace. They can handle content that is deeper, more complex, and more abstract than the regular grade level instruction provides. This requires pre-assessment, curriculum differentiation, and consistent on-going assessment. Higher-level thinking skills should be embedded in all that high ability students do. |
| **Instructor** | • Teacher (or other specialist) trained to teach programs being taught |
| **Assessment** | • Benchmark screenings, (at least 3 times per year), outcome-based assessments, ongoing program assessment, pre-assessment, and informal assessment for *all* students<br>• Screening for giftedness looks for exceptional abilities compared to age-mates. Screening requires assessment and observations that seek strengths in problem solving, cognition, communication, creative and critical thinking, social skills, and academic and talent areas.<br>• Screening tools may include but not be limited to a standardized non-verbal or cognitive abilities test and observation scales, as well as general district, classroom or state assessments. *The* |

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| | *goal is to collect a body of evidence or student profile of strengths and learning needs for programming.*<br>• Teacher knowledge of content benchmarks, student demonstrations of learning, and use of data will ensure *continuous learning without ceilings for the gifted learner.* The Montana Content standards should be the basis for curricular modifications made to meet individual student need. Essential Learning Expectations are also a great tool to use in making curricular modifications for students.<br>• Parents informed of student progress on a regular basis |
| **Time** | • Core instruction provided daily<br>Recommend K-3: 90 minutes reading instruction (matched to student readiness level) Grades 4-6: 60-90 minutes reading instruction (matched to student readiness levels)<br>• *Gifted students are significantly more likely to retain science and mathematics content accurately when taught 2-3 times **faster** than "normal" class pacing. They are also significantly more likely to forget or mislearn science and mathematics content when they must drill and review it more than 2-3 times.*<br>• Applications of skills throughout the day across all content areas |
| **Setting** | • General education classroom* (with appropriate grouping for differentiation) |
| **Support** | • Home practice and support<br>• Attention to affective needs<br>• Use of trained paraprofessionals to challenge opportunities<br>• Use of trained paraprofessionals for skills practice for Twice-exceptional* students<br>• Encouragement of parent-school partnerships<br>• Parent training as needed<br>• Professional development for school personnel, especially regarding differentiation, Twice-exceptional, knowledge of the characteristics of gifted learners and understanding of proven strategies for gifted/advanced learners (e.g., concept learning, acceleration, grouping)<br>• Ongoing verification for fidelity of implementation |

* A consideration in learning-strategies instruction for gifted/learning-disabled students (Twice-exceptional) is *where* the instruction will take place. Although it may seem natural for the special education teacher to deliver any and all compensatory instruction, a twice-exceptional student typically encounters at least three teachers in any given week (Robinson, 1999). It is important that the regular education and gifted education teacher be aware of any learning-strategies instruction in an effort to incorporate the skills throughout the student's learning.

# Differentiated Instruction

Differentiated instruction should be provided to accelerate learning for high-ability students and maximize student achievement for all students as part of Tier 1 instruction. The classroom teacher should provide flexible instructional grouping of students based on their ongoing identified needs. Classroom teachers should be clear about *what* they are trying to teach and *why* it is important. Research has shown that teachers are often too random in their delivery of instruction, unclear as to what they are teaching, and unable to define the succinct reason for instruction.

The most important Tier 1 strategy for Gifted or Advanced Learners is Differentiated Instruction. The key principles of Differentiated Instruction are:

- Student-centered instructional practices and materials are standards-based and grounded in research;
- Instruction has clear objectives with focused activities to reach the objectives;
- Assessment results are used to shape future instructional decisions;
- Students have multiple avenues to show mastery of essential content and skills, and to demonstrate their learning; and
- Instructional pacing, depth and complexity are varied.

| Strategies for Differentiating Instruction | |
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| **Abstraction** | Content that goes beyond surface detail and facts to underlying concepts, generalizations, and symbolism. |
| **Active Engagement** | Instructional strategies that result in relevance and engagement for students. |
| **Agendas** | A personalized list of tasks that a paRTIcular student must complete in a specified time |
| **Choice** | Provide opportunities for choices and flexibility. Many GT students love the opportunity for choice and given an opportunity will construct their own differentiated choices. |
| **Choice boards, Tic-tac-toe** | Students make a work selection from a certain row or column. Teachers can provide for student learning needs while giving students choice. |

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| **Compacting** | This strategy should be done at ***all*** levels to prevent repetition and re-teaching of content students have already mastered. To compact the teacher must pre-test students in the content to be presented. Students mastering, or nearly mastering the content, then move on to an advanced level of difficulty. According to research done by Dr. Karen Rogers, compacting has a .83 effect size, particularly when math and science content is compacted. |
| **Conceptual Discussions** | High level discussions of themes, concepts, generalizations, issues, and problems, rather than a review of facts, terms and details. |
| **Extensions** | Offer relevant extension options for learners who need additional challenges. |
| **Flexible Assessments** | Offer different assessment options that allow students to demonstrate their mastery of new concepts, content, and skills. |
| **Flexible tasks** | Allowing students to structure their own projects and investigations according to their strengths and interests. |
| **Flexible project deadlines** | Students negotiate for more or less time to complete a learning experience and its matching product or assessment. |
| **Grouping** | Regular opportunities to work in whole groups, small groups, with a partner, or in an independent setting. |
| **Higher-order thinking skills** | Questioning in discussion or providing activities based on processing that requires analysis, synthesis, evaluation, or other critical thinking skills. |
| **Independent study** | Students research a teacher or self chosen topic, developing either traditional or non-traditional products to demonstrate learning. |
| **Jigsaw/Cooperative learning** | Just as in a jigsaw puzzle, each piece-each student's part is essential for the full completion and full understanding of the final product. |
| **Learning centers or stations** | Activity stations that demonstrate awareness of different academic needs and learning style preferences. |
| **Learning contracts** | Students negotiate individually with teacher about what and how much will be learned and when product will be due; often connected with an individual or independent project-see Appendix A. |
| **Learning programs** | Computer programs or websites to meet learners' needs. |
| **Mini-lessons** | Mini-lessons provide levels of scaffolding, support and challenge as needed for students of like ability/need. |

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| **Most difficult first** | Students can demonstrate a mastery of a concept by completing the five most difficult problems with 85 percent accuracy. Students who demonstrate mastery do not need to practice any more. |
| **Open-ended assignments** | Providing students with tasks and work that do not have single right answers or outcomes. The tasks may have timelines and a sequence of activities to be accomplished, but outcomes will vary for each student. |
| **Orbital study** | Independent investigations, generally of three to six weeks. They orbit or revolve around some facet of the curriculum. Students select their own topics for the orbital, and they work with guidance and coaching from the teacher to develop more expertise on the topic as well as learning the skills of an investigator. |
| **Pre-assessment** | An array of pre-assessment options can guide instruction. By regularly pre-assessing students, teachers can flexibly group students by ability and readiness levels. Pre-assessment is also essential for compacting. |
| **Problem-based learning** | A student-centered instructional strategy in which students collaboratively solve problems and reflect on their experiences. Learning is driven by challenging, open-ended problems. Students work in small collaborative groups. Teachers take on the role as "facilitators" of learning. |
| **RAFT** | Provides students choice in a writing assignment varying Role, Audience, Format, and Topic. |
| **Subject integration "Theme-based" units** | Uniting two or more disciplines and their content through a conceptual theme, such as "origins," "change" or "friendship." |
| **Tiered assignments** | Varied levels of tasks to ensure that students explore ideas and use skills at a level that builds on what they already know and encourages growth. All students explore the same essential ideas but work at different levels of depth and complexity. |
| **Vary levels of complexity** | Books and instructional materials at different levels of complexity allow students to study the same concepts but at levels of depth and complexity to fit their learning needs. |
| **Vary pacing** | plan to accommodate varied pacing allowing students to move through content at a pace appropriate for their learning needs. |
| **Vary tasks** | provide different homework options, journal prompts, and questions |

Adapted from: The Differentiated Classroom: Responding to the Needs of All Learners, Carol Ann Tomlinson

# Grouping Strategies

The identified strengths of a gifted student will cause ***all*** *gifted students to experience at least Tier 2 interventions so that ceilings are not placed on learning.* These interventions might be classroom based, a small group with a specialist, a specialized program delivered by the classroom teacher or specialist or classes to meet the individualized needs of gifted students. Nevertheless, Tier 1 Differentiation will involve grouping students. The following table, based on Re-forming Gifted Education, Karen B. Rogers, will explain grouping strategies for Tier 1 and Tier 2 interventions/differentiation.

| Grouping Strategies | |
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| **Cluster grouping** | Identify and place four to eight high ability students in the same grade level in one class with a teacher who likes them, is trained to work with them and will devote proportional class time to differentiating for them. |
| **Cooperative learning groups** | Providing grouped activities for the purpose of developing peer interaction skills and cooperation. May be like or mixed ability groups. |
| **Cross-graded classes, cross-age grouping** | Grouping children by their achievement level in a subject area rather than by grade or age level. Also known as multi-age classrooms. |
| **Flexible skills grouping** | Students are matched to skills by virtue of readiness, not with the assumption that all need the same spelling tasks, computation drill, writing assignment, etc. Movement among groups is common and based on readiness on a given skill and growth in that skill. |
| **Full-time ability grouping** | Children of high ability or with high achievement levels are put into a separate group for differentiating their instruction. Ability grouping can be full or part-time, permanent or flexible sorting. |
| **Like-ability cooperative learning** | Organizing groups of learners in three to four member teams of like ability and adjusting the group task accordingly. |
| **Regrouping by achievement for subject instruction** | A form of grouping, usually (but not always) sorted for once a year, that delivers appropriately differentiated curriculum to students at a specific ability or achievement level. |
| **Within class performance grouping** | Sorting of students, topic by topic or subject by subject, within one classroom for the provision of differentiated learning for each group. |

# Notes on Grouping Strategies for Gifted Students

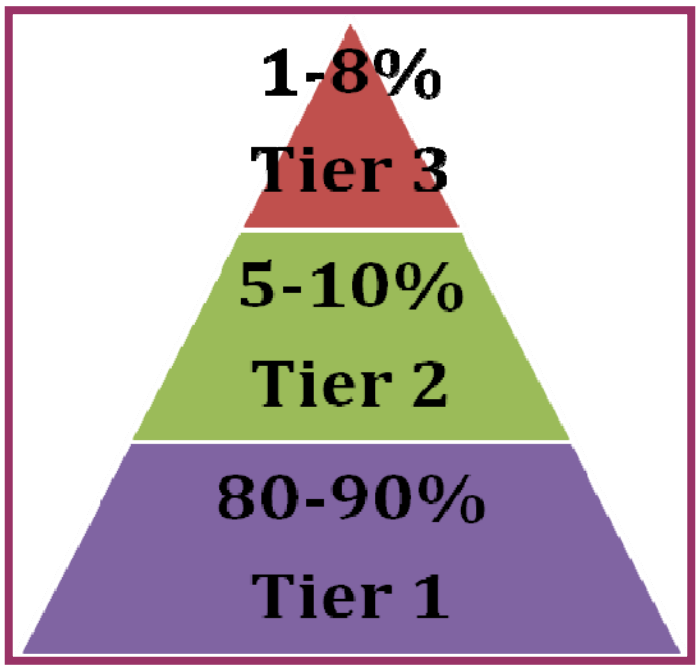
- *Gifted students tend to mistrust the benefits of small group learning; care must be taken that the tasks demonstrate that the group can "do better" than the individual.*
- *Gifted students perform significantly more highly when the majority of their time in academic core areas is spent in true peer interactions.*
- *Gifted students show a preference for self-structured tasks and self-imposed deadlines.*
- *Gifted students show a preference for working on projects alone or with one like-ability peer.*
- *Some gifted students do not appreciate, and actually resent, being peer tutors. This is especially true if they are called upon to teach others on a regular basis.*

# Tier 2: Strategic Targeted Intervention

Tier 2 refers to evidence-based targeted supplemental skill-building intervention. *In the case of gifted or advanced learners, Tier 2 refers to students who require specific supports to make adequate progress.* This is part of an on-going decision making process to determine the effectiveness of interventions and programming options and assessment of learning to meet the needs of students for whom general education Tier 1 strategies, (i.e., Differentiated Instruction) do not support adequate progress.

This instruction may be matched with the specific skill deficits of Twice Exceptional students who fail to meet Tier 1 benchmarks in core subjects. Tier 2 instruction is systematic, explicit, and aligned with Tier 1 instruction.

Instructional interventions are typically delivered in small groups of students with similar strengths and interest needs. Instruction is based on the needs of individual students as determined by assessment data.




## Tier 2: Essential Elements of Instructional Interventions

| COMPONENTS | INSTRUCTION |
|---|---|
| **Curriculum and Materials** | • Evidence-based core curriculum and instructional materials in core subject areas<br>• Evidence-based intervention materials and strategies that supplement Tier 1 instruction |
| **Instructional Organization** | • Homogeneous groups, see Tier 1 grouping strategies and the following list of appropriate strategic instructional organizations<br>• Explicit instruction targeting special skill deficits (Twice-exceptional)<br>• Compacting |

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| | • Opportunities for acceleration |
| **Instructor** | • Teacher or other specialists trained to teach programs being taught<br>• Gifted Education Specialist<br>• Twice Exceptional reading specialist, special education teacher, speech/language pathologists |
| **Assessment** | • Tier 1 benchmark screening plus<br>• Diagnostic and ongoing progress monitoring monthly, bi-weekly, or weekly looking for trends which will inform instructional practice<br>• Pre-assessments<br>• Learning plan, learning goal assessments<br>• Teacher knowledge of content benchmarks, student demonstrations of learning, and use of data will ensure *continuous learning without ceilings for the gifted learner.*<br>• Parents informed of student progress on a regular basis |
| **Time** | • 20 to 60 minutes daily in addition to general classroom Tier 1 instruction<br>• When students are compacted into different work they are pursuing an alternate assignment, activity, or product while the rest of the class works on the regular curriculum work. They may be doing assignments that are more complex, and involve greater depth and/or breadth than the regular work. They may also be involved in a project that requires original research. These assignments, most likely, will require more time than the regular assignments. |
| **Setting** | • General education classroom *or* other appropriate setting<br>* A note regarding Twice-Exceptional students |
| **Support** | • Home practice and support<br>• Before and after school programs<br>• Parent training<br>• Use of trained paraprofessionals to provide support to the classroom teacher as he/she provides Tier 2 instruction (emphasize trained in the needs and traits of gifted and advanced learners)<br>• Instructional teams such as: literacy team, math team, grade-level team, or student support team<br>• Professional development for ***all*** school personnel<br>• Ongoing verification for fidelity of implementation |

*Kennedy (2002) noted that regular education teachers rarely have training to teach students with multiple exceptionalities in their classroom. Similarly, special education teachers rarely receive any training in the unique needs of the gifted. Therefore, collaboration is an important aspect of teaching students who are both gifted and learning disabled..

## Strategies and Interventions for Tier 2

| STRATEGY | DESCRIPTION | RESEARCH GAINS |
|---|---|---|
| **Ability grouping** | Children of high-ability or with high-achievement levels are put into a separate group for differentiating instruction. Can be full or part-time or flexible sorting | Studies of performance of gifted students in ability-grouped classes in which the curriculum was accelerated, the effect size was found to be 10 months (Kulik, 1992) |
| **Abstraction** | Going beyond surface information; use of symbolism, underlying meaning of content | |
| **Cluster grouping** | Cluster grouping is the practice of placing the top group of students from a grade into the same classroom. This assures the teacher of having a "group," rather than just one student who is above and beyond his/her peers. The teacher of this group should enjoy working with high performing students and have a background in differentiated instructions for high ability students. With this strategy high-ability students are working on advanced curriculum and assignments as a group within a regular classroom. It avoids the situation where a single child is always working by him/herself thus allowing interaction and discussion within their own group. | Current research suggests that there are several benefits of CG: Gifted students regularly interact with their intellectual peers and age peers (Delcourt & Evans, 1994.) CG provides fulltime services for gifted students Without additional cost. Curricular differentiation is more likely to occur when a group of high-achieving students is placed with a teacher who has expertise, training and a desire to differentiate than when these students are distributed among many teachers. (Bryant, 1987: Kennedy 1995; Kulik 1992; Rogers 1991) |
| **Competitions or advanced clubs** | (See resources for additional list of competitions.)<br>Math Olympiad<br>Future Problem-Solving<br>Destination Imagination<br>Junior Great Books<br>JASON Project | Pre and post test data of highly talented mathematical 3-6th grade students who paRtIcipated in a program offered by Johns Hopkins University gained an average of 46 percentage points. (Mills, Ablard and Gustin, 1994) |
| **Complexity** | Providing more difficult and intricately detailed content | |

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| **Concept-based programs** | Programs such as Mentoring Mathematical Minds and Accelerated Math focus on mathematical reasoning, creativity and conceptual understanding | Students using such programs as M3 and Accelerated Math have shown statistically significant gains in mathematical understanding and have outperformed students in comparison groups. |
| **Cooperative grouping with like-ability learners** | Organizing groups of learners in three to four member teams of like ability and adjusting the group task accordingly. | Grouping academically talented students together for instruction has been found to produce positive achievement outcomes when the content and instruction provided are appropriately differentiated to be challenging. (Gentry, 1999; Kulik and Kulik, 1992; Rogers, 1991) |
| **Cross-graded classes** | This is a variation of Regrouping for Specific Instruction. In this situation the entire school must teach the same subjects at the same time so that students go to classes that are taught at their level regardless of grade level placement. At a paRtIcular time each day students would travel to the appropriate grade (or room) for their instruction. The instruction would be delivered for their level. For gifted students, again, the focus would be on pace, depth, breadth, and complexity. | Several studies show that students who were placed in grade levels that matched their mathematical readiness had effect gains of over 1. (Kulik, 1992; Mills et. al., 1994) |
| **Curriculum compacting** | Compacting is the practice of pretesting student knowledge of material before it is taught. This can be done by using end of level tests, a written narrative of what the students already know, etc. If the student has mastered, or nearly mastered the material he/she should be delivered a curriculum that is new and that offers a challenge.<br><br>With skill based subjects, such as math and early reading, the end of unit tests work well. With more content-based areas, such as literature, social studies, and some science, students could have the option to take the book, study the | Effect size of .83 (one year and eight additional months of growth per year. A study of 436 2-6$^{th}$ grade high ability students revealed that even though 40-50 percent of the curriculum was eliminated, performances on standardized tests were equivalent to that of students who received regular curriculum instruction. (Reis, et. al., 1993) |

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| | chapter, take the test, then go on to replacement, or extension, material. | |
| **Diagnostic testing/prescriptive instruction model** | Above level diagnostic testing is used to determine the strengths and weaknesses of gifted students and determine areas of study. Especially useful for mathematically gifted students. | |
| **Early instruction in presentation, research, study and organizational skills** | Direct instruction in research which will allow students to pursue areas of strength and interest. | |
| **Extra-curricular learning** | Accelerated programs outside of regular school curriculum may be offered after school, on Saturday or during the summer. | Pre and post test data of highly talented mathematical 3-6$^{th}$ grade students who participated in a program offered by Johns Hopkins University gained an average of 46 percentage points. (Mills, et. al., 1994) |
| **Goal setting for college planning** | Early planning and goal setting for post secondary education | |
| **Honors, Advanced Placement courses** | Students take courses with advanced or accelerated content (usually at the secondary level) in order to test out or receive credit for completion of college level course work. (Although one such program is actually designated "Advanced Placement," several such programs exist—for example, International Baccalaureate.) | |
| **Method of inquiry** | Relating content to how things work, methods that are used in the field. | |
| **Mentorship** | Student(s) are placed with a subject matter expert or professional to further a specific interest or proficiency, which cannot be provided within the regular educational setting. | |
| **Organization** | changing the sequence for how content is taught | |

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| **Partial day or send-out (pullout) grouping** | removal of gifted/advanced learners from the regular classroom for a specific period of time each day or week to work with a trained specialist on differentiated curriculum | When the content is sufficiently deepened, advanced and differentiated pullout programs were shown to be effective. (Delcourt, Loyd, Cornell and Goldberg; 1994) |
| **Pull-in programs** | See partial day/pullout programs | Above |
| **Real audiences** | presenting work to a live audience or providing an expert in the field to evaluate the child's work | |
| **Real world problems** | Providing learners with a problem or situation to solve that is relevant to their own lives | |
| **Regrouping by achievement for subject instruction** | Students who are gifted in math or reading are grouped for instruction with similarly gifted students. This usually happens within the whole school or grade level (Walk to Read model). The students may change groups as needed, or indicated, by assessment. Schools using this strategy will have reading, math, etc. within each grade level at the same time each day. High ability students then go to the teacher teaching the curriculum at a faster pace, with more breadth, depth and complexity. | In 25 studies where curriculum remained the same for all groups, there was only a slight gain in academic growth. There are substantial gains however when an alternative curriculum is chosen to meet the needs of mathematically gifted students. (Kulik, 1992) 11 out of 14 studies indicated that students in cross-grade programs achieved an effect gain greater than 1. |
| **Skill-based programs** | Computer programs such as Renaissance Learning and Success Maker that allows the student to work at their own pace and gives direct, immediate feedback to student and teacher. | ITBS scores of students using a skill based mathematics program were significantly higher in skills than students who did not use the program. (Ysseldyke, Tardrew, Betts, Thill, and Hannigan, 2004) |
| **Specialized curriculum programs, Intentional academic programs, groups** | William and Mary Curriculum, National History Day, Mentoring Mathematical Minds, Accelerated Math, Project Spring, Project Spring II (see appendix) | 2006 research on Mentoring Mathematical Minds, to cite just one example, showed gains over a similar comparison group on TIMSS , NAEP and ITBS scores for third, fourth and fifth graders. National Center for Gifted and Talented Research. |

| | | |
|---|---|---|
| **Study of people** | Relating content to the people in the field, famous people, human situations and problems | |
| **Talent opportunities** | Provision of experiences for an individual student with a demonstrated high performance or high potential in a specific area either through individual work or with a group of students with like talents. | |
| **Talent searches, university program** | Provision of highly challenging, accelerated learning experiences, usually on a college campus in a specific talent area for highly talented students. | |
| **Theme-based units** | Students are involved in a study of concepts through theme based units that stress the application of reasoning to reading, writing, the creation of high-quality projects, and the organization of learning. | A study of advanced literature groups found a significant learning advantage for groups who received theme-based instruction that emphasized the use of reasoning to reading and writing and required high quality products compared to groups who did not receive theme-based, high-expectation instruction. Van Tassel-Baska, et. al., (2002) |

# Tier 3: Intensive Targeted Interventions

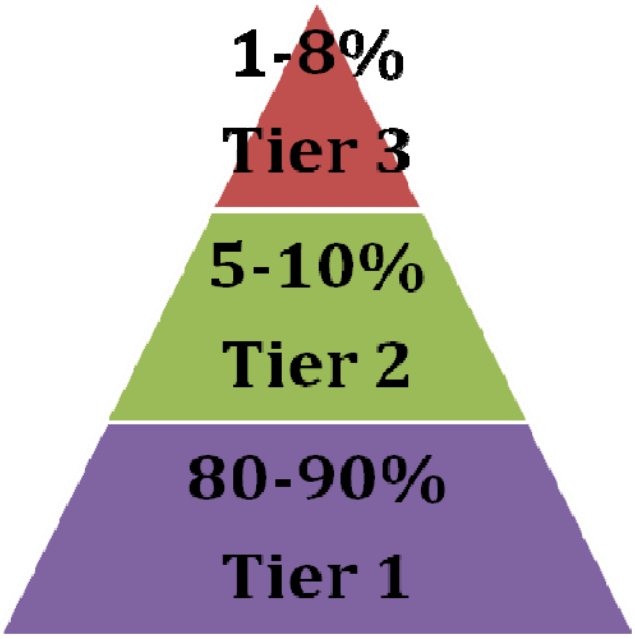
**Tier 3** refers to evidence-based intensive targeted interventions for students whose academic and intellectual needs are not being met by Tier 1 or Tier 2 supplemental, targeted instruction.

Children and adolescents who will need this intervention are highly gifted (IQ of 145 or greater) or exceptionally gifted (IQ 180+). This small percentage of students requires radical acceleration, dual enrollment, early entrance, specialized counseling, long-term mentorships or participation in a specialized classroom or school for gifted students.

They require a curriculum that differs significantly in pace, level, and complexity from age-level peers. Tier 3 instruction may take place in addition to Tier 1 instruction or it may replace it entirely. If progress monitoring and diagnostic assessments indicate that a student is not making adequate progress, a student may need a replacement of the core program (Tier 1 instruction) or be referred for further evaluation.

The highly gifted child needs an IEP that will make provisions for alternative learning opportunities which may include acceleration or cluster grouping. In addition, early identification of these individuals will help to ensure that programming may be planned for them to allow for continued growth at the student's level of potential. Early speech, reading and other developmental skills are indicators of a highly gifted child. For some students regular differentiation and instructional management/delivery are not enough.

The higher the IQ of the student, the more acceleration must happen in order to maintain balance with the student and his/her curriculum.




- Individuals with an IQ of 145+ appear in the population at a ratio of 1 in 1,000
- Individuals with an IQ of 160+ appear in the population at a ratio of fewer than 1 in 10,000
- Individuals with an IQ of 180+ appear in the population at a ratio of fewer than 1 in a million

## *NOTES ON EXCEPTIONALLY GIFTED STUDENTS*

From “The use of radical acceleration in cases of extreme intellectual precocity”
**Miraca U.M. Gross**
**National Association for Gifted Children (NAGC), Gifted Child Quarterly 1992 Vol. 36** http://www.geniusdenied.com/ARtIcles/Record.aspx?NavID=13_16,13_16&rid=11241

Exceptionally gifted children appear in the population at a ratio of less than 1 in 10,000. Research has repeatedly found that these children differ quite significantly from moderately gifted age-peers on many cognitive and affective variables. Because of this, *it is not enough to place them in part-time programs, such as a resource room or pull-out, which are designed for moderately gifted students; they require full-time grouping with children closer to their own mental age and levels of socio-affective development.* Research suggests that exceptionally and profoundly gifted students are best served by a program of radical acceleration incorporating a number of grade-skips appropriately spaced through the student's school career, supplemented with subject acceleration where it is required. It is important that the student is also provided with lateral enrichment at each stage. Radical acceleration provides the extremely gifted child with the intellectual and social companionship of children at similar stages of cognitive and affective development. Exceptionally gifted children retained with age-peers, or accelerated by only one year, are at serious risk of peer rejection and social isolation.

*It is now generally understood and accepted that a child's level of social and emotional development is more highly correlated with his mental age than with his chronological age* (Callahan & Kauffman, 1982; Tannenbaum, 1983; Janos & Robinson, 1985). The significance of this is immense when dealing with the extremely gifted since the higher the IQ, the greater the discrepancy between chronological and mental age, and thus the wider the gap between the psychosocial development of the gifted child and that of his age-peers.

The common perception of the extremely gifted as eager, academically successful young people who display high levels of task commitment has been refuted by research which demonstrates that *many highly gifted children underachieve seriously in the regular classroom, and that, by the end of elementary school, many have almost completely lost the motivation to excel* (Pringle, 1970; Painter, 1976; Whitmore, 1980; Gross & Feldhusen, 1990).

## Tier 3 Essential Elements of Instruction

| COMPONENTS | INSTRUCTION |
|---|---|
| **Curriculum and Materials** | • Evidence-based intervention materials and strategies that supplement or replace Tier 1 instruction<br>• Programs and strategies emphasize skill building in areas of need as identified through diagnostic assessments when dealing with twice exceptional students<br>• Possible replacement of the core program. Continue Tier 1 and possibly Tier 2 instruction *when it matches the learning needs of the student* (for example a student may need Tier 3 interventions/acceleration in mathematics, but find the core curriculum in reading a good match) |
| **Instructional Organization** | • Explicit instruction targeting specific skill deficits (Twice Exceptional)<br>• Usually individual interventions, most often some form of acceleration Students should have an IEP or ILP (Individual Learning Plan)<br>• The curriculum should differ ***significantly*** in pace, level, and complexity from age-level peers. |
| **Instructor** | • Teacher, reading specialist, special education teacher, ELL teacher, speech/language pathologists, or other specialists trained to teach programs being taught. Some students may have more than one teacher |
| **Assessment** | • Tier 1 benchmark screening plus<br>• Screenings for giftedness, may include IQ testing, behavior scales, out of grade level testing, ceilingless testing.<br>• Diagnostic assessments and ongoing progress-monitoring<br>Weekly or bi-weekly<br>• Parents informed of student progress on a regular basis |
| **Time** | • Part or all of the core curriculum for age peers may be replaced |
| **Setting** | • Appropriate setting within school, more than one school or outside of the school depending upon the acceleration or intervention |
| **Support** | • Instructional teams such as: literacy team, math team, grade-level team, or student support team (for Twice-exceptional)<br>• Provision of parent training as needed for home practice and support<br>• Additional tutoring programs<br>• Home practice and support<br>• Staff development especially regarding options for acceleration and research regarding positive effects of such<br>• Before and after-school programs (not a substitute)<br>• Ongoing verification for fidelity of implementation |

Effect size and comments (Third column) from research by Karen B. Rogers and Richard Kimpston.

# Types of Acceleration

These interventions move a student through and educational program faster than the usual rate or at an age younger than the typical age

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| **Single subject acceleration** | A student bypasses the usual progression of skills and content mastery in one subject where great advancement or proficiency has been observed. The learner will progress at the regular instructional pace through the remaining subject areas. | **Research based gains: .57**<br>Subject acceleration in mathematics resulted in significant positive academic increases for both elementary and secondary students. Socialization was neither harmed nor enhanced; the psychological effects were unclear. It seems logical that since this form of acceleration accounts for only a small time change in the regular routine, no significant differences in emotional and social well-being would be noted. |
| **Whole-grade skipping** | A learner is double promoted to bypass one or more grade levels. | **Research based gains: .49 academic, .31 social**<br>Grade skipping for bright children also appears to be very beneficial. Its greatest research-supported academic and social effects appear to be in grades 3-6. |
| **Early entrance to school** | A gifted child who shows readiness to perform schoolwork enters kindergarten or first grade one to two years earlier than the usual beginning age. | ***Research based gains .49 academic***<br>Early entrance to school appears to be a relatively safe accelerative option for bright children. Social and psychological adjustment were neither enhanced nor threatened by this practice. If this were the only option offered a gifted child, it would capitalize on a child's natural intelligence as early as possible and would allow the child to establish a peer group early. As a result, the challenge of making new friends would be encountered only once, instead of with each decision to accelerate. |

| | | |
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| **Non-graded Classroom** | A learner is placed in a classroom undifferentiated by grade levels where he/she works through the curricular materials at a pace appropriate to individual ability and motivational level. | Bright students in a non-graded or multi-grade classroom environment showed substantial, positive academic gains at the elementary grade levels. Although no research on social outcomes could be located, it seems likely that bright children who can move through the curriculum at a comfortable, but accelerated, pace would not find social rejection so readily as when they stand out as significantly different at one grade level. |
| **Curriculum Compacting** | The regular curriculum of any or all subjects is tailored to the specific gaps, deficiencies, and strengths of an individual student. The learner tests out or bypasses previously mastered skills and content, focusing only on mastery of deficient areas, thus moving more rapidly through the curriculum. | ***Research based gains: .83 (one year and eight additional months)of growth per year.*** Curriculum compacting-whereby the student begins each school year at his/her actual level of performance in each subject-results in significantly positive academic effects, especially in mathematics. The single study of social outcomes suggested no differences in socialization, and the psychological impact of this option was unclear. |
| **Grade telescoping** | A student's progress is reorganized through junior high or high school to shorten the time by one year. Hence, junior high may require two years instead of three, or high school may require three years instead of four. | **Research based gains: .40** Another implication from our analysis is that allowing children to progress through three years' curriculum in two years' time-grade telescoping-showed very positive academic outcomes for both junior and senior high students. The option neither enhanced nor harmed socialization or psychological adjustment. |
| **Concurrent enrollment** | A student attends classes in more than one building level during the school year—for example, high school for part of the day and junior high for the remainder. | **Research based gains: .22** |
| **AP courses** | A student takes courses with advanced or accelerated content (usually at the secondary level) in order to test out or | **Research based gains: .27** The research on Advanced Placement did not support significant outcome |

| | | |
|---|---|---|
| | receive credit for completion of college level course work. (Although one such program--the College Board's AP and Pre-AP classes--is actually designated "Advanced Placement," several such programs exist— for example, International Baccalaureate.) | changes for students *once they entered college full time.* Social and psychological outcomes were unclear. This does not mean, however, that Advanced Placement is not a viable accelerative option for bright high school students. If nothing else, the research clarifies that participants are not harmed at the college level by having been credited for some courses. Also worth mentioning are the potential, positive effects of students having been adequately challenged and having been given more time to enroll in courses better suited to their interests and ability levels. |
| **Mentorship** | A student is placed with a subject matter expert or professional to further a specific interest or proficiency, which cannot be provided within the regular educational setting. | **Research based gains: .57 academic, .47 socialization, .42 self-esteem** |
| **Early admission to college** | Student skips some of high school and attends college | **Research based gains: .30**<br>Allowing bright students to bypass at least one year of high school to enter college full-time resulted in significantly positive academic outcomes. Socialization and psychological adjustment showed no change. There has to be some concern, however, for the high school student who opts for early admission, not completing a high school diploma. Financial constraints, poor health, family crises, or any combination of circumstances could keep the student from completing college, in which case he or she has no educational certification. |
| **Credit by examination** | Through successful completion of tests, a student is allowed to receive a specified number of college credits upon entrance to college. (Advanced Placement and the College Level Examination Program are two examples.) | **Research based gains: .59**<br>There appeared to be a strong relationship between testing, out of college courses (credit by examination) and subsequent college performance in those subject areas. |

| | | |
|---|---|---|
| **Distance learning** | Enrollment in college or other challenging courses while still enrolled with age peers (Stanford University's EPGY for example) | Similar to subject acceleration |
| **Extra-curricular programs** | Johns Hopkins Center for Talented Youth, Duke University Talent Identification Program<br>Center for Talent Development (CTD) Northwestern University<br>For additional resources: http://hoagiesgifted.com/academics.htm | See References page 44 |
| **Special schools for the gifted** | For example, Davidson Academy | http://www.davidsonacademy.unr.edu/ |

Acceleration: What we do vs. what we know **Association for Supervision and Curriculum Development (ASCD) October 1992**

**An Important Note on Acceleration from**
**"Acceleration: What we do versus what we know"**
**by Karen B. Rogers**

Teachers and administrators have a research-supported menu of accelerative practices to select from that result in substantial academic achievement gains for students. Very few options, however, appear to directly affect students' social skills and self-concept. *If teachers have avoided offering these practices to bright students out of a concern for the social and emotional effects, such misgivings should be laid to rest.* Those who wish to enhance outcomes in affective areas for accelerated students, however, might consider the assistance of a school counselor or a support group.

With careful attention to the cognitive, social, and emotional needs of prospective accelerated students, teachers and administrators can recommend from an array of practices with the confidence that the child will not only survive but will thrive in a more challenging learning environment.

# Twice-Exceptional Learners

Gifted students with disabilities are at risk because their educational and social/emotional needs often go undetected. The resulting inconsistent academic performance can lead educators to believe twice-exceptional students are not putting forth adequate effort. Hidden disabilities may prevent students with advanced cognitive abilities from achieving their potential. The frustrations related to unidentified strengths and disabilities can result in behavioral and social/emotional issues. For some twice-exceptional students, behavior plans become the focus of their interventions. The behaviors are managed, but the underlying disabilities are never addressed. School can become a very frustrating experience for struggling twice-exceptional students, their teachers, and parents.

The defining characteristics of the twice-exceptional learner is evidence of high performance or potential in a gift, talent or ability combined with a disability that suppresses the student's ability to achieve according to his/her potential (Brody & Mills, 1997). Disabilities may include dyslexia, auditory processing problems, visual processing deficits, emotional behavioral disabilities, ADD or ADHD, and autism. Twice-exceptional students will be found in all three Tiers and will need interventions that will differ from interventions for students who have disabilities but who are not gifted or of high ability. *Individual student data may show exceptional ability in one area and a weakness that is an extreme disparity for the individual, even if the weakness is demonstrated at age-grade level.*

Researchers have offered suggestions of how many gifted and learning-disabled students are present in the United States. Winner (1996) estimated that between 120,000 and 180,000 students with learning disabilities also have above-average intelligence quotients (IQ). Winner also noted that approximately 10 percent of high-IQ students read two or more years below grade level. Some researchers estimate that 2–10 percent of all students enrolled in gifted programs also have a learning disability (McEachern & Bornot, 2001), while others predict that the actual number is closer to two to five percent of the nation's gifted population (Delisle & Galbraith, 2002). http://www.prufrock.com/client/client_pages/GCT_Readers/Disabilities/Ch._11/Gifted_Students_Who_Are_Learning_Disabled.cfm Other research indicates that two to five percent of the gifted population will have disabilities and two to five percent of students with disabilities will be gifted (Dix & Schafer, 1996; Whitmore, 1980; & Maker, 1977).

Ongoing collaboration among special, general and gifted education, and parents is critical for identification and long-term planning for these students. It is essential that the disabilities are identified early so appropriate interventions can be provided at optimum times. Unfortunately, the struggles of many twice-exceptional students go unnoticed for many years, resulting in learning gaps and undeveloped potentials.

# Explanation of Strategies for Twice-Exceptional Students

**Appropriate Identification**

Teachers need to be sensitive to clues that seem to indicate ***contradictions*** in abilities rather than rely on standardized or intelligence test scores. Possible examples are:

- above grade extensive vocabulary/struggle with spelling basic words;
- strong verbal expression/poor illegible handwriting;
- good listening comprehension skills/ low self-concept;
- sophisticated sense of humor/difficulty engaging in social aspects of the classroom;
- difficulty sitting still;
- can become deeply immersed in special interests or creative activities and or
- reason abstractly and solve complex problems/dislike rote memorization.

The following list should be viewed as characteristics which are *typical* of many children who are gifted and who also have a disability, rather than characteristics which *all* such children possess. These twice-exceptional children do not form a simple, homogeneous group; they are a highly diverse group of learners.

**Indicators of Cognitive/Affective Strengths**

- Have a wide range of interests that are not related to school topics or learning.
- Have a specific talent or consuming interest area for which they have an exceptional memory and knowledge.
- Are interested in the “big picture” rather than small details.
- Are extremely curious and questioning.
- Possess high levels of problem-solving and reasoning skills.
- Have penetrating insights.
- Are capable of setting up situations to their own advantage often as a coping method.
- Are extremely creative in their approach to tasks and as a technique to compensate for their disability.
- Have an unusual imagination.
- Are humorous often in “bizarre” ways.
- Have advanced ideas and opinions which they are uninhibited in expressing.
- Have a superior vocabulary.
- Have very high energy levels.

## Indicators of Cognitive/Affective Problems

- Have discrepant verbal and performance abilities.
- Have deficient or extremely uneven academic skills which cause them to lack academic initiative, appear academically unmotivated, avoid school tasks, and frequently fail to complete assignments.
- Are extremely frustrated by school.
- Have auditory and/or visual processing problems which may cause them to respond slowly, to work slowly, and to appear to think slowly.
- Have problems with long-term and/or short-term memory.
- Have motoric difficulties exhibited by clumsiness, poor handwriting, or problems completing paper-and-pencil tasks.
- Lack organizational skills and study skills; often appearing to be extremely "messy."
- Are unable to think in a linear fashion; have difficulty following directions.
- Are easily frustrated; give up quickly on tasks; are afraid to risk being wrong or making mistakes.
- Have difficulty explaining or expressing ideas, "getting-to-the-point," and/or expressing feelings.
- Blame others for their problems while believing that their successes are only due to "luck."
- Are distractible; unable to maintain attention for long periods of time.
- Are unable to control impulses.
- Have poor social skills; demonstrate antisocial behaviors.
- Are highly sensitive to criticism.

## Indicators of Low Self-Esteem

One of the most common characteristics of these children is low self-esteem. They frequently "disguise" this low self-esteem through the use of any or all of the following behaviors:

- Anger
- Self-criticism
- Crying
- Withdrawal
- Daydreaming and fantasy
- Apathetic behaviors
- Disruptive behaviors
- Clowning behaviors
- Denial of problems

## Compensation and Remediation

- Create a transition plan to emphasize areas of giftedness as well as needs for remediation when students are moving from one school level to another.
- Develop strategies which nurture the student's potential.
- Identify learning gaps and provide explicit instruction.
- A case manager who is responsible for facilitating communication between counselors, special educators, gifted educators, and general educators; facilitates collaboration to plan

curriculum modifications and connect students with resources and technology tools to compensate for weaknesses.
- Provide course options that ease course load and accelerate strength areas such as summer school and Internet courses.
- Teach and encourage students to use compensation strategies such as talking to professors, using other student's notes to supplement their own, taking fewer classes, taking advantage of extended time for testing, listening to books on tape, and utilizing technology to compensate for weaknesses.

### Social and Emotional Support

- Twice-exceptional students should receive counseling do develop self-esteem and high self-efficacy.
- These students need many opportunities to exercise their areas of high ability.
- They need supportive adults at home and at school.
- Twice-exceptional students should enhance their capacity to cope with mixed abilities.

## EXPLANATION OF RESEARCH GAINS FOR THESE STRATEGIES

### Appropriate Identification

- Many gifted students with learning disabilities appear to be average students because their giftedness and disability merge. Because of this, 41% of gifted students with disabilities are not diagnosed until college (McEachern & Barnot, 2001).
- IQ tests may not be sensitive enough to determine significant discrepancies between subtest scores, particularly for gifted populations (Kavale & Forness, 1984).

### Compensation and Remediation

- Twice-exceptional students are particularly vulnerable during transitions from one level of education to the next. One program in New Mexico found success with a plan designed to follow students from elementary through high school ( Nielsen, Higgins, Wilkinson, & Wiest Webb, 1994)
- A study of twice-exceptional students who were successful in college found that all of the students in the study used compensation strategies. They were also willing to work harder than their peers to obtain the same level of results (Reis & Neu, 1994).

### Social and Emotional Support

- In a study of the resiliency and risk factors of twice-exceptional students it was found that they are at great risk for poor self-concept, poor self-efficacy, hypersensitivity, emotionality, high levels of frustration, anxiety, and self-criticism.
- The students who were more successful had good self-esteem and high self-efficacy. Those who had supportive adults also were more successful students. (Dole, 2000)

## Classroom Implementation

Teachers need to be very perceptive in recognizing contradictory high abilities and disabilities so that students may be identified and receive compensation, remediation, acceleration and modifications. Because each student who is twice-exceptional has a unique set of abilities and disabilities, the specific strategies used in the classroom will vary from student to student.

# Characteristics of Advanced Learners

**During a child's first five or six years some of the most commonly exhibited characteristics are:**

- extraordinary vocabulary at an early age;
- varying sleep patterns and needs, often beginning in infancy;
- exceptional understanding of complex or abstract ideas;
- precocity in math and language tasks – knowledge and behaviors that are not taught or coached, but surface on their own;
- advanced sense of humor and understanding of jokes and puns;
- heightened sensitivity to feelings and ideas; and/or
- amazing curiosity – questioning and touching almost everything (it seems!).

**General Intelligence**

- Recalls facts easily
- Is very well informed about one or more topics
- Shows keen insight into cause-effect relationships
- Has exceptional ability to solve problems
- Has phenomenal memory

**Intelligence in a Specific Academic Area**

- Exhibits extended attention in math, science and/or humanities
- Displays a passion for a topic of interest
- Makes independent contact with or carries on correspondence with experts in the field
- Puts extensive efforts into a project - time is of no consequence
- Manages to change a topic under discussion to the discipline of his/her interest (e.g., a discussion on today's weather soon becomes focused on meteorology or global warming)

**Creativity**

- Possesses strong visual thinking or imaginative skills
- Transfers ideas and solutions to unique situations
- Prefers variety and novelty and an individual way of solving problems
- Asks many and unusual questions
- Often has several projects going at once
- Resists external controls, tests and challenges limits

**Leadership**

- Relates to and motivates other people
- Organizes others for activities
- Demonstrates high levels of self-assurance when making decisions or convincing peers
- Sees problems from many perspectives
- Listens to and respects the opinions of others (or listens to, and debates the opinions of others)

**Visual/Performing Arts**

- Shows very high ability in the visual arts, i.e., painting, sculpting, and/or arranging media in a unique way
- Possesses unusual ability to create, perform, or describe music
- Possesses unusual talent in drama or dance
- Uses aRtIstic ability to express or evoke feelings
- Persists with an artistic vision

# Glossary of RtI/Gifted Terms

**504 Act:** Section 504 of the Rehabilitation Act of 1973 as amended by the Americans with Disabilities Act Amendments Act of 2008 (ADAAA) states that a student is eligible for accommodations under Section 504 if the student has a mental or physical impairment that substantially limits one or more of the student's major life activities that impacts education.

**Ability or Achievement Grouping:** Children of high ability or with high achievement levels are put into a separate group for differentiating their instruction. Can be full or part-time, permanent or flexible sorting.

**Accelerated Pace of Presentation:** Substantial increase in tempo of content presentation and acquisition.

**Acceleration:** Interventions that move a student through an educational program at a faster than normal rate.

**Advanced Placement or International Baccalaureate Courses:** Provision of course with advanced or accelerated content at the secondary school level, affording student opportunity to "test out" of or be given credit for completion of college-level course work.

**Cluster Grouping:** Identify and place top five to eight high ability students in the same grade level in one class with a teacher who likes them, is trained to work with them, and devotes proportional class time to differentiating for them.

**Compacted Curriculum/Compacting:** Streamlining the regular curriculum to "buy time" for enrichment, accelerated content, and independent study. Usually involves pre-assessment or pretest of what the students have already mastered.

**Complex Tasks:** Providing multiple-step projects for advanced knowledge and skill acquisition.

**Conceptual Discussions:** High-level discussions of themes, concepts, generalizations, issues, and problems, rather than review of facts, terms, and details.

**Concurrent Enrollment:** Allowing students to attend classes in more than one building level during the same school year.

**Cooperative Learning Groups:** Providing grouped activities for the purpose of developing peer interaction skills and cooperation. May be like or mixed ability groups.

**Credit by Examination:** Provision of testing programs whereby the student, after successful completion of a test, will be offered a specified number of course credits. The College Level Examinations Program (CLEP) is the program widely used at the university level.

**Credit for Prior Learning:** Allowing students to demonstrate mastery of previously learned material through some form of assessment; same as "testing out."

**Cross-Grade/Cross-Age Grouping:** Grouping children by their achievement level in a subject area rather than by grade or age level, also known as multi-age classrooms.

**Differentiated Instruction:** A matching of instruction to meet the different needs of learners in a given classroom by modifying delivery, time, content, process, product, and the learning environment. One or more of these elements can be modified to provide differentiation.

**Early Admission to College:** Permitting a student to enter college as a full-time student without completion of a high school diploma.

**Early Content Mastery:** Giving students access to knowledge and concepts in a content area considerably before expected grade- or age-level expectations.

**Early Entrance to School:** Allowing selected gifted children showing readiness to perform schoolwork to enter kindergarten or first grade one to two years earlier than the usual beginning age.

**Evaluation:** Summarizing assessment results, then making decisions based on these results.

**Evidence-Based Instruction (EBI):** Refers to empirical research that applies rigorous, systematic, and objective procedures to obtain valid knowledge. This includes research that: employs systematic, empirical methods that draw on observation or experiment; has been accepted by a peer-reviewed journal or approved by a panel of independent experts through a comparably rigorous, objective and scientific review; involves rigorous data analyses that are adequate to test the stated hypotheses and justify the general conclusions drawn; relies on measurements or observational methods that provide valid data across evaluators and observers and across multiple measurements and observations; and can be generalized.

**Flexible Project Deadlines:** Occasional renegotiation of when projects or assignments will be due, especially when high quality work has already been shown.

**Flexible Service Delivery:** Describes the prescriptive, focused, research-based interventions provided to students by any trained or skilled staff member, regardless of the child's special or general education categorization or the educator's special or general education job description.

**Flexible Tasks:** Allowing students to structure their own projects and investigations according to their strengths and interests.

**Full-Time Ability Grouping:** Sorting students, usually once a year, by ability level and then scheduling all of their academic (sometimes nonacademic) classes together.

**Grade Telescoping ("Rapid Progress"):** Shortening the time of progressing through a school level, such as middle, junior or senior high by one year, while still covering all curricula.

**Grade-Skipping:** Double promoting a student such that he/she bypasses one or more grade levels.

**Higher-order Thinking Skills:** Questioning in discussions or providing activities based on processing that require analysis, synthesis, valuation, or other critical thinking skills.

**Implicit Instruction:** An instructional ideology that assumes that students are naturally active learners who construct new personalized knowledge through linking prior knowledge and new knowledge. In implicit instruction, the teacher guides students only as much as is necessary for them to build their own understanding. Scaffolding, or teacher support through questioning and explaining, is provided only as needed.

**Independent Study Projects:** Structured projects agreed upon by student and supervising teacher that allows a student to individually investigate areas of high interest or to advance knowledge.

**Individual Education Plan (IEP):** A written statement for a student with a disability that is developed, reviewed and revised in accordance with the state of Administrative Rules of Montana (ARM) and Individuals with Disabilities Education Act (IDEA) 2004 Part B.

**Individual Educational/Learning Plans (IEP or ILP or EP):** Provision of formal written plan for managing and delivering the curricula for a child with extraordinary differences in ability or educational needs.

**Individualized "Benchmark" Setting:** Working with an individual student to set performance outcomes for the student's next product or performance.

**Instructional Intervention:** Explicit and systematic instruction delivered by highly skilled teachers tailored to meet the identified needs of struggling learners. This instruction is delivered in small groups.

**Intense Intervention:** Explicit and systematic instruction delivered by highly skilled teacher specialists. This instruction is targeted and tailored to meet the needs of struggling learners in small groups or one-on-one with increased opportunities for practice and teacher feedback.

**Intervention:** Provided by general and special educators, based on training, not title. Designed to help a student improve performance relative to a specific, realistic and measurable goal. Interventions are based upon valid information about present levels of performance relative to grade-level expectations, realistic implementation with fidelity, and may include modifications and accommodations. Interventions are multi-tiered, research-based, target-specific skills, time limited and parent inclusive.

**Learning Contracts:** Student and teacher jointly develop a contract for accomplishment of learning outcomes(s); often involves a streamlining of regular class work.

**Like-Ability Cooperative Learning:** Organizing groups of learners in three-to-four member teams of like ability and adjusting the group task accordingly.

**Magnet School:** Provision of a separate school focused on a specific subject area or areas (arts, math, etc.) or on a specific group of students (academically gifted or mathematically talented) with students gifted in that area.

**Mentoring:** Establishment of one-to-one relationship between student and outside-of-school expert in a specific topic area or career.

**Modifications (Assessments):** Changes in the test or assessment conditions that fundamentally alter the test score interpretation and comparability. Providing a student with a modification during a state accountability assessment constitutes a test irregularity because it invalidates the student's test score.

**Multi-Grade/Multi-Age Classes:** Combining two or three grade levels into one classroom and placing the brightest children as the youngest children in the class.

**Multisensory:** Simultaneously engaging the visual, auditory and kinesthetic modalities.

**Multi-tiered Intervention:** Provides different levels of intensity (core, strategic, intensive) based upon student response to instruction/intervention and with ongoing progress monitoring and focused assessment.

**Non-Graded Classes:** Placing learners in a classroom without regard to age or grade and allowing them to work through the materials at a pace and level appropriate to their individual ability and motivational levels.

**One-on-One Tutoring/Mentoring:** Placing a gifted student with a personal instructor who will offer curriculum at the appropriate level and pace.

**Parent-School Partnerships:** When parents and school staff collaborate for school success. In the RtI process at Tier 1, all parents are notified and encouraged to ask questions about the change in school procedures to effectively challenge students in the learning process. Parents are included in data collection and decision making through participation in the Student RtI Team. There is collaboration to develop effective intervention and practice opportunities for school and home.

**Partial Day/Send-Out Grouping:** Removal of gifted children from a regular classroom for a specified period of time each day or week to work with a trained specialist on differentiated curriculum.

**Personal Goal Setting:** Teaching students to identify personal goals and how to prioritize time and activities to reach those goals.

**Positive Behavioral and Intervention Supports (PBIS):** A system of tiered preventative and remedial programs, activities and interventions that provide a positive school climate and support student social/behavioral success.

**"Problem":** A "problem" in the problem-solving process is defined as the difference between grade/age-level expectations and student present level of performance (PLOP). The difference between these two numbers describes the nature and extent of the "problem" and serves as a guide for goal setting and intervention decisions. An example of a "problem" is a grade-level expectation in Grade 2 for a minimum oral reading fluency (ORF) rate in the fall of 23 correct words per minute (CWPM); a Grade 2 student ORF score of 10 CWPM; the "problem" is the difference between 23 and 10, or "13 CWPM."

**Problem-Based Learning:** Providing students with unstructured problems or situations for which they must discover the answers, solutions, concepts, or draw conclusions and generalizations.

**Problem-Solving Skills Training:** Providing students with problem-solving strategies matched to differing problem types.

**Problem-Solving:** A process that uses assessment data to identify the problem, analyze why the problem is occurring, develop and implement an intervention/instructional plan, and evaluate outcomes. The RtI Teams use problem solving to evaluate student learning and instructional effectiveness at both the system/school level as well as at the student level.

**Progress Monitoring:** The ongoing process of collecting and analyzing assessment data to determine student progress toward specific skill goals or general outcomes. At Tier 2 and Tier 3, progress monitoring data is used to make instructional decisions about the effectiveness of

intervention to accelerate student learning that increases the learning rate and enables the student to meet a specific goal designed to meet at least minimum proficiency levels.

**Regrouping by Performance Level for Specific Subject Instruction:** A form of grouping, usually sorted for once a year that delivers appropriately differentiated curriculum to students at a specific ability or achievement level.

**Research-based:** Interchangeable term with “evidence-based."

**Scaffolding:** Support given to assist students in learning a skill through explicit instruction, modeling, questioning and feedback, etc., to ensure student performance. Scaffolding should gradually be withdrawn as students become more independent of teacher support.

**School for the Gifted:** Provision of a separate school with admission requirements that students be identified or “certified” as gifted.

**School-within-a-School:** Gifted students are placed in self-contained classes at every grade level in an otherwise heterogeneous school.

**Secondary:** Tier 2 intervention level in a Positive Behavioral and Intervention Support (PBIS) system that is delivered to the students in need of additional training and supports for behavioral success. These are often delivered in a small group of students with similar training and support needs.

**Service Learning Projects:** Provision of academic credit for student volunteer work on community and welfare projects.

**Single-Subject Acceleration:** Allowing students to move more quickly through the progression of skills and content mastery in one subject where great advancement or proficiency has been observed; other subjects may be at grade level.

**Skill:** Something a student knows how to do expertly and automatically. Basic skills of reading, written expression and math are critical life skills.

**Special Education:** Special education is specially designed instruction, at no cost to the parents, to meet the unique needs of a student with a disability, including instruction conducted in the classroom, in the home, in hospitals and institutions and in other settings; and instruction in physical education. The term includes speech-language pathology services and may include other related services, travel training and applied technology education, if they meet the definition of special education.

**Strategy:** A conscious use of a specific, evidence-based method.

**Supplemental Intervention:** An addition to Tier 1 classroom instruction targeted to meet specific needs of students in one or more of the five critical elements of reading instruction.

**Supplemental Materials:** Materials that are aligned to and support the core instructional program.

**Systematic Instruction:** A carefully planned sequence for targeted instruction.

**Talent Development:** Provision of experiences for an individual student with demonstrated high performance or potential in a specific area either through individual work or with a group of students with like talent.

**Talent Search Programs:** Provision of highly challenging, accelerated learning experiences, usually on a college campus in a specific talent area (math, writing) for highly talented students.

**Talent/Ability Grouping:** Grouping students of like ability or like interest on a regular basis during the school day for pursuit of advanced knowledge in a specific content area.

**Targeted:** Focused instruction on an identified skill.

**Team Members (IEP):** special education teacher, parent, student when appropriate, person to interpret data and others as needed.

**Telescoping of Learning Time:** Any technique that shortens the amount of time a student is provided to acquire content and skills, i.e., rapid progress, acceleration, compacting, tempo; can be subject specific or across a grade level.

**Tertiary:** Tier 3 intervention level in a Positive Behavioral and Intervention Support (PBIS) system that is delivered to the few students in need of very specific, unique and intensive supports for success. These are often part of a Behavioral Intervention Plan (BIP) that is the result of a Functional Behavioral Assessment (FBA) evaluation.

**Tier 1 Intervention:** Tier 1 interventions are actually preventative programs that are provided to all students in a classroom, school, district or rural educational cooperative, regardless of individual needs. Examples include: "Bully-proofing," "Character Education," Evidence-based core curriculum and instructional practices, and "Guided Reading."

**Tier 2 Intervention:** Tier 2 intervention is strategic and targeted intervention that is implemented as a result of assessment that indicates a student is not making adequate gains from Tier 1 instruction/programs. Tier 2 intervention is typically delivered in small groups of students with similar skill concerns. Examples include "Sound Partners," "Read Well," social skills training and "Knowing Mathematics."

**Tier 3 Intervention:** Tier 3 interventions are for students who require highly individualized, systematic, and explicit instruction to accelerate learning rate and/or to support learning. Intervention is considered to be intensive and is typically delivered one-on-one or in very small groups of students(2-3) with similar skill needs.

**Tutoring:** Additional practice for struggling students provided by trained individuals. Tutoring does not serve as an intervention. Tutoring may also be conducted between peers, either within grade, or cross-grade peer tutoring.

**Universal:** Tier 1 preventative programs, services, activities in a Positive Behavioral and Intervention Support (PBIS) system that is school-wide and delivered to all students and staff in the school building.

**Within-Class Ability/Performance Grouping:** Sorting of students, topic-by-topic or subject-by-subject within one classroom for the provision of differentiated learning for each group.

# Resources

http://www.mtagate.org/

Montana AGATE, state Association for Gifted and Talented Education

http://www.gifted.uconn.edu/

Neag Center for Gifted Education and Talent Development, The National Center for the Gifted and Talented (NRC/GT). **TONS** of free information and research as well as connections to other resources

http://www.hoagiesgifted.org/

Hoagies' gifted education page for "all things gifted" Inclusive information about Gifted kids, great for parents and educators

http://www.nagc.org/

National Association for Gifted Children, inclusive

http://www.nagc.org/index.aspx?id=1069

Information about The Parallel Curriculum, a curriculum design model to develop high potential and challenge high-ability students. Free professional development materials.

http://www.sengifted.org/

Supporting the Emotional Needs of Gifted Children

http://www.gt-cybersource.org/?NavID=0_1

Davison Institute's gateway to information and resources for and about gifted children, great clearing house of information on GT

http://www.apa.org/ed/cgepweblinks.html

American Psychological Association's center for gifted education policy, great links to other information on GT

http://cfge.wm.edu/

College of William and Mary's Center for Gifted Education, includes curriculum for GT students

http://www.whitworth.edu/Academic/Department/Education/Gifted/Index.htm

Whitworth University (Spokane, Washington) Gifted Education Department

http://www.coe.uga.edu/gctweb/index.html

University of Georgia's Gifted Education home page

http://www.cec.sped.org

Council for Exceptional Children—twice-exceptional

http://www.eric.ed.gov/

Education Research Information Clearinghouse

http://www.ascd.org/

Association for Supervision and Curriculum Development, great information about curriculum and differentiation, includes online courses

http://www.opi.state.mt.us/

Montana Office of Public Instruction, use pull down menu (Programs and Services of OPI) in upper right, scroll down to Gifted and Talented Grant Program

http://www.cde.state.co.us/gt/

Colorado Dept. of Education Gifted Web site. They have done a lot of good work with RtI and GT, including these documents:

http://www.cde.state.co.us/cdesped/download/pdf/slThinkingPoints_RtIGT.pdf

http://www.cde.state.co.us/gt/download/pdf/TwiceExceptionalResourceHandbook.pdf

# Programs for Gifted and Talented Students

http://www.gifted.uconn.edu/mentor/

University of Connecticut summer program for talented kids

http://www.ctd.northwestern.edu/

Center for Talent Development at Northwestern University

http://www.davidsongifted.org/?NavID=0_2

The Davidson Institute for Talent Development

http://www.tip.duke.edu/

Duke University Talent Identification Program

http://epgy.stanford.edu/

Stanford University's program for Gifted Youth

http://cty.jhu.edu/

Johns Hopkins University, Center for Talented Youth

http://www.carroll.edu/academics/gifted/index.cc

Carroll College Gifted Institute

http://www.giftedstudy.com/

Summer Institute for the Gifted

http://www.renzullilearning.com/default.aspx

Online resources for Gifted Children

http://www.gifted.uconn.edu/projectm3/

Mentoring Mathematical Minds

http://www.du.edu/city/about/index.html

Center for Innovative and Talented Youth, University of Denver.

http://www.du.edu/city/programs/academic-year-programs/rocky-mountain-talent-search.html

Rocky Mountain Academic Talent Search, valuable assessment information by taking an above-level test, information about special summer programs for high-ability students and the opportunity to qualify for summer programs at the University of Denver and other universities throughout the United States

http://www.nationalhistoryday.org/

National History Day is an annual contest that engages students in historical research using primary documents.

http://www.renlearn.com/am/

Accelerated Math helps create differentiated instruction to meet individual student need.

http://www.odysseyofthemind.com/

Odyssey of the Mind, is an international educational program that provides creative problem-solving opportunities for students from kindergarten through college. Team members apply their creativity to solve problems that range from building mechanical devices to presenting their own interpretation of literary classics. They then bring their solutions to competition on the local, state, and world level.

http://www.moems.org/

Math Olympiad, math contests for $4^{th}$--$8^{th}$ graders

http://soinc.org/

Science Olympiad, one of the premiere science competitions in the nation, provides rigorous, standards-based challenges to more than 530 teams in 48 states.

http://firstlegoleague.org/community/default.aspx

First Lego League (FLL) introduces children around the world to the fun and experience of solving real-world problems by applying math, science and technology.

## Appendix A

**From Colorado Department of Education--Learning Contract**

<table>
<tr><td colspan="3">Strategy</td></tr>
<tr><td>Grade Level</td><td colspan="2">Subject</td></tr>
<tr><td colspan="3">Prepared By Name<br>District<br>Telephone<br>E-Mail Address</td></tr>
<tr><td colspan="3">Concept<br><br>Content Standard</td></tr>
<tr><td colspan="3">Benchmark<br>Know:<br>Understand:<br>Do:</td></tr>
<tr><td colspan="2">Assessment (Demonstration of the learning)</td><td>Lesson Duration<br>____ day/s</td></tr>
<tr><td>Pre Assessment</td><td colspan="2">Alternative Lesson or assignment for students passing the pretest (Do not record here for the purpose of this contribution.)</td></tr>
</table>

| |
|---|
| **Materials (Appropriate for readiness of advanced learners)** |
| **Introduction** |
| **Instruction, Student Groupings-Activities-Engagement** |
| **Assessment Rubric: Product/Performance** |

**Appendix B**

# THE DOs AND DON'Ts OF INSTRUCTION:
## *What It Means To Teach Gifted Learners Well*

by Carol Ann Tomlinson, Ed.D, The University of Virginia

Some people suggest that gifted education is just sort of "fluffy" or enriching-gravy on the potatoes, perhaps, but not anything especially substantial or critical in the way of mental fare. Others propose that all gifted education is what's good for all students. Unfortunately, those two criticisms sometimes stem from observing classrooms where gifted learners are taught inappropriately.

So what does it mean to teach a highly able student well? Of course it will vary some with the age of the child, the subject, the learning style of the student-and possibly even the child's gender or culture. Certainly appropriate instruction for such learners varies for a child who comes to school rich with experiences vs. a child who is equally able but lacks richness of experience. And it will vary with a child who has immense potential versus a peer with somewhat less capacity. Nonetheless, there are general indicators of appropriate curriculum and instruction for highly able students (in their areas of strength), and general indicators of inappropriate curriculum and instruction for such learners.

### Good Instruction for Gifted Learners

**1) Good curriculum and instruction for gifted learners begins with good curriculum and instruction**. It's difficult, if not impossible, to develop the talent of a highly able student with insipid curriculum and instruction. Like all students, gifted learners need learning experiences that are rich. That is, they need learning experiences that are organized by key concepts and principles of a discipline rather than by facts. They need content that is relevant to their lives, activities that cause them to process important ideas at a high level, and products that cause them to grapple with meaningful problems and pose defensible solutions. They need classrooms that are respectful to them, provide both structure and choice, and help them achieve more than they thought they could. These are needs shared by all learners, not just those who are gifted. Good instruction for gifted learners must begin there.

**2) Good teaching for gifted learners is paced in response to the student's individual needs.** Often, highly able students learn more quickly than others their age. As a result, they typically need a more rapid instructional pace than do many of their peers. Educators sometimes call that "acceleration," which makes the pace sound risky. For many gifted learners, however, the comfortable pace-like walking "quickly" suits someone with very long legs. It's only "fast" for someone with shorter legs. On the other hand, it's often the case that advanced learners need a slower pace of instruction than many other students their age, so they can achieve a depth or breadth of understanding needed to satisfy a big appetite for knowing.

**3) Good teaching for gifted learners happens at a higher "degree of difficulty" than for many students their age.** In the Olympics, the most accomplished divers perform dives that have a higher "degree of difficulty" than those performed by divers whose talents are not as advanced. A greater degree of difficulty calls on more skills, more refined skills, applied at a higher plane of sophistication. A high "degree of difficulty" for gifted learners in their talent areas implies that their content, processes and products should be more complex, more abstract, more open-ended, more multifaceted than would be appropriate for many peers. They should work with fuzzier problems, will

often need less teacher-imposed structure, and (in comparison to the norm) should have to make greater leaps of insight and transfer than would be appropriate for many their age. Gifted learners may also (but not always) be able to function with a greater degree of independence than their peers.

**4) Good teaching for gifted learners requires an understanding of "supported risk."** Highly able learners often make very good grades with relative ease for a long time in school. They see themselves (and often rightly so) as expected to make "A's," get right answers and lead the way. In other words, they succeed without "normal" encounters with failure. Then, when a teacher presents a high-challenge task, the student feels threatened. Not only has he or she likely not learned to study hard, take risks and strive, but the student's image is threatened as well. A good teacher of gifted students understands that dynamic, and thus invites, cajoles and insists on risk but in a way that supports success. When a good gymnastics coach asks a talented young gymnast to learn a risky new move, the coach ensures that the young person has the requisite skills, then practices the move in harness for a time. Then the coach "spots" for the young athlete. Effective teachers of gifted learners do likewise.

## Inappropriate Instruction for Gifted Learners

1) Instruction for gifted learners is inappropriate when it asks them to do things they already know how to do, and then to wait for others to learn how. Many advanced learners regularly complete assignments calling on materials, ideas and skills they have already mastered. Then they wait for peers to catch up, rather than being pre-assessed and assigned more advanced materials, ideas and skills when they demonstrate competency.

2) Instruction for gifted learners is inappropriate when it asks them to do "more of the same stuff faster." Reading more books that are too easy and doing more math problems that have ceased being a challenge are killers of motivation and interest.

3) Instruction for gifted learners is inappropriate when it cuts them loose from peers and the teacher for long periods of time. Asking a highly able student to sit at a desk in the back of the room and move through the math book alone ignores a child's need for affiliation, and overlooks the fact that a teacher should be a crucial factor in all children's learning. It also violates the importance of meaningful peer interaction in the learning process, as well as in the process of social and emotional development.

4) Instruction for gifted learners is inappropriate when it is structured around "filling time." Highly able students are often asked to go write a play, complete a puzzle, or do classroom chores because they have completed required tasks that take others longer. It would be difficult to defend such practices as a high-quality use of educational time.

5) Instruction for gifted learners is inappropriate when they spend substantial time in the role of tutor or "junior teacher." All students need to be colleagues for one another, giving a hand or clarifying procedures when needed. That's quite different from when advanced learners spend chunks of time on a regular basis teaching what they already know to students who are having difficulty. Some educators suggest that doesn't harm highly able learners because their test scores remain high. That begs the question of the extended learning these students might have garnered had the same amount of time been spent in pursuit of well-planned new ideas and skills.

6) Instruction for gifted learners is inappropriate when it is rooted in novel, "enriching" or piecemeal learning experiences. If a child were a very talented pianist, we would question the quality of her music teacher if the child regularly made toy pianos, read stories about peculiar happenings in the music world and did word-search puzzles on the names of musicians. Rather, we would expect the student to work directly with the theory and performance of music in a variety of forms and at consistently escalating levels of complexity. We would expect the young pianist to be learning how a musician thinks and works, and to be developing a clear sense of her own movement toward expert-level performance in piano. Completing word-search puzzles, building musical instruments and reading about oddities in the lives of composers may be novel, may be "enriching," (and certainly seems lacking in coherent scope and sequence, and therefore sounds piecemeal). Those things will not foster high-level talent development in music. The same hold true for math, history, science and so on.

### It's Actually Simple-In Theory

What it takes to teach gifted learners well is actually a little common sense. It begins with the premise that each child should come to school to stretch and grow daily. It includes the expectation that the measure of progress and growth is competition with oneself rather than competition against others. It resides in the notion that educators understand key concepts, principles and skills of subject domains, and present those in ways that cause highly able students to wonder and grasp and extend their reach. And it envisions schooling as an escalator on which students continually progress, rather than a series of stairs, with landings on which advanced learners consistently wait.

It's not so hard to articulate. It's fiendishly difficult to achieve in schools where standardization is the norm, and where teachers are supported in being recipe followers, rather than flexible and reflective artisans. In schools where responsive instruction is a carefully supported indicator of professional growth, the capacity to extend even the most capable mind is a benchmark of success.

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## Appendix C

### *Research Support for Acceleration,* From the Acceleration Work Group, Council of State of Directors Programs for the Gifted

As an educational intervention, acceleration is decidedly effective for high ability students. The research support for acceleration that has accumulated over many decades is robust and consistent. The research allows us to confidently state that carefully planned acceleration decisions are successful.

Both grade-based and content-based acceleration are effective interventions in academic and social-emotional domains for high-ability students. Grade-accelerated students generally outperform their chronologically older classmates academically, and both groups show approximately equal levels of social and emotional adjustment (cf., Assouline et. al., 2003; Colangelo et. al., 2004; Kulik, 2004; Kulik & Kulik, 1992; Lipscomb, 2003; Sayler & Brookshire, 1993; Southern & Jones, 1991). To be clear, there is no evidence that acceleration has a negative effect on a student's social-emotional development.

Some educators are reluctant to accelerate a student because they are concerned about long-term outcomes. However, longitudinal research has demonstrated that accelerants attain advanced degrees, produce scholarly works and contribute professionally at rates well above societal baselines (Lubinski et. al., 2001, 2006). In follow-up interviews, the students indicated they wished they would have had more acceleration opportunities while in the K-12 setting (Lubinski et. al., 2001, 2006).

The review of acceleration research presented in *A Nation Deceived* (Colangelo et al., 2004) provides the necessary supporting evidence for our recommendations for developing an acceleration policy. For more information about acceleration research, visit IRPA's Web site at http://www.accelerationinstitute.org.

# References


Brody, L. E., & Mills, C. J. (1997). "Gifted children with learning disabilities: A review of the issues." Journal of Learning Disabilities, 30, 282-296.

Bryant, M. A. (1987). "Meeting the needs of gifted first grade children in a heterogeneous classroom." Roeper Review, 9, 214-216.

Callahan, C. M., & Kauffman, J. M. (1982). "Involving gifted children's parents: Federal law is silent, but its assumptions apply." Exceptional Education Quarterly, 3(2), 50-55.

Delcourt, M., & Evans, K. (1994). "Qualitative extension of the learning outcomes study" (Research Monograph 94110). Storrs, Connecticut: University of Connecticut, The National Research Center on the Gifted and Talented.

Delcourt, M.A.B., Loyd, B.H., Cornell, D.G., & Goldberg, M.D. (1994). "Evaluation of the effects of programming arrangements on student learning outcomes" (Research Monograph No. 94018). Storrs, Connecticut: University of Connecticut, The National Research Center on the Gifted and Talented.

Dix, J. & Schafer, S. A. (1996). "From Paradox to performance: Practical strategies for identifying and teaching GT/LD students." Gifted Child Today, 19 (1) 22-29

Dole, S. (2000). "The implications of the risk and resilience literature for gifted students with learning disabilities." Roeper Review, 23(2), 91-96

Gentry, M. L. (1999). "Promoting Student Achievement and Exemplary Classroom Practices through Cluster Grouping: A Research-Based Alternative to Heterogeneous Elementary Classrooms" (Research Monograph 99138). Storrs, Connecticut: University of Connecticut, The National Research Center on the Gifted and Talented.

Gross, M. U. M. (1992). "The use of radical acceleration in cases of extreme intellectual precocity." Gifted Child Quarterly, Vol. 36.

Gross, M. U. M., & Feldhusen, J. F. (1990). "The exceptionally gifted child." Understanding Our Gifted, 2 (5), 1, 7-10.

Janos, P.M. and Robinson, N.M. (1985). "Psychosocial development in intellectually gifted children." F.D. Horowitz and M.O'Brian (Eds.) The Gifted and Talented: Developmental Perspectives (149-195). Washington DC: American Psychological Association.

Kennedy, D.M. (1995). "Plain Talk about Creating a Gifted-Friendly Classroom." Roeper Review, v17, n4, 232-34.

Kulik, J. A. (1992). "An analysis of the research on ability grouping: Historical and contemporary perspectives" (RBDM 9204). Storrs, Connecticut: University of Connecticut, The National Research Center on the Gifted and Talented.

Kulik, J. A. and C.-L. C. Kulik (1992). "Meta-analytic findings on grouping programs." Gifted Child Quarterly 36(2): 73.

Maker, C. J. (1977). "Providing programs for the handicapped gifted." Reston, Virginia: Council for Exceptional Children.

McEachern, A. G., & Bornot, J. (2001). "Gifted students with learning disabilities: Implications and strategies for school counselors." Professional School Counseling, 5, 34–41.

Mills, C. J., Ablard, K. E., & Gustin, W.C. (1994) "Academically talented students' achievement in a flexibly paced mathematics program." Journal for Research in Mathematics Education, 25, 495-511.

Nielsen, M. E., Higgins, L. D., Wilkinson, S. C., & Webb, K. W. (1994). "Helping twice-exceptional students to succeed in high school." Journal of Secondary Gifted Education, 5(3), 35-39

Painter, F: (1976). Gifted children: A research study. Knebworth, England: Pullen Publications.

Pringle, M.L.K. (1970). Able misfits. London, England: Longman.

Reis, S.M., & Neu, T.W. (1994). "Factors involved in the academic success for high ability university students with learning disabilities." Journal of Secondary Gifted Education, 5(3), 60-74.

Reis, S.M., Westberg, K.L., Kulikowich, J.K., Caillard, F., Herbert, T.P., Plucker, J., et al. (1993). "Why not let high ability students start school in January? The Curriculum Compacting Study" (Research Monograph No. 93106). Storrs: National Research Center for the Gifted and Talented, University of Connecticut.

Renzulli, J.S., & Reis, S.M. (1994). "Research related to the school wide enrichment triad model." Gifted Child Quarterly, 38(1), 7-20.

Robinson, S.M., (1999). "Meeting the needs of students who are gifted and have learning disabilities." Intervention in School and Clinic, 34, 95-204.

Rogers, K.B. (1991)" The relationship of grouping practices to the education of the gifted and talented learner." (Research Monograph No. 9102). Storrs, Connecticut: University of Connecticut, The National Research Center on the Gifted and Talented.

Rogers, K. B. (2002). Re-forming gifted education. Scottsdale AZ: Great Potential Press.

Rogers, Karen B. and Richard D. Kimpston, (1992). "Acceleration: What We Do vs. What We Know." Educational Leadership, Oct. 1992.

Tannenbaum, A.J. and Baldwin, L.J. (1983). "Giftedness and Learning Disabilities: A Paradoxical Combination." In Fox, L.H., Brody, L. and Tobin, D., Learning Disabled/Gifted Children: Identification and Programming. Baltimore, MD: University Park Press.

Tomlinson, Carol Ann (1999). The Differentiated Classroom: Responding to the Needs of All Learners. Alexandria, VA: Association for Supervision and Curriculum Development.

Tomlinson, Carol Ann (1997). "The do's and don'ts of instruction: what it means to teach gifted learners well." Instructional Leader, Texas Elementary Principals and Supervisors Association.

VanTassel-Baska, J., Zuo, L., Avery, L. D., & Little, C. A. (2002). "A curriculum study of gifted student learning in the language arts." Gifted Child Quarterly, 46, (1) 30-44.

Whitmore, J.R. (1980)." Giftedness, conflict and underachievement." Boston: Allyn & Bacon.

Winner, E. (1996) "Gifted Children: Myths and Realities." Basic Books, NY.

Ysseldyke, J.E., Tardrew, S., Betts, J., Thill, T., & Hannigan, E. (2004). "Use of an instructional management system to enhance math instruction of gifted and talented students." Journal for Education of the Gifted, 27 (4), 293-310.